AUTHOR INDEX

ARNOLD, H.J.P.	The Great Wall of China From Space	248
BEKEY, I	NASA's Plans for Manned Missions to the Moon and Mars	297
BOND, P.R.	The Soviet Snowstorm: Winged Wonder or White Elephant?	50
BURKE J.D.	Lunar Observatories	308
CASSUTT, M.	The Manned Space Flight Engineer Programme	26
CHAPPELL, J.	French Sign Photon Agreement	295
CHRISTY, R.D.	Satellite Digest	43,85,121,160,190
GIBSON, R.	A Way Forward for Britain?	177
GILES A.B. & HILL, K.M.	Optical Observations of Geostationary Spin Stabilised Satellites	310
HARRIS, L.	Into Space	215
HARVEY, B.	A New Eye on the Seas	62
HEMPSELL, C.M.	Space Industrialisation - A New Perspective	224
HEMPSELL, C.M.	Space Stations and Beyond	393
KIDGER, N.	Soviet Shuttle Mission Report	2
KIDGER, N.	Above the Planets	45,102,138,154
KIDGER, N.	Mir Mission Report	64,77,191, 402
KIDGER, N.	Mir Expansion Delayed	116
KIDGER, N.	The Soviets Return to Space	332
LONGDON, N.	On The Way To Horizon 2000	166
MacLENNAN, D.	Making Space News in New Zealand	143
McLAUGHLIN, W.I.	Space at JPL	12,93,124,156,202,282, 340, 407
MALINA, R.	Satellite Telescopes	143
MILLER, S. & LISMAN, S.	Rendezvous with Comet Kopff	195
MILLS, P.	Energia and Buran at Baikonur	380
PARKINSON, R.C.	Cities on the Moon - A Lost Vision?	220
PARKINSON, R.C.	My Career in Space	424
PATTIE, N.	Skynet 4 - The Unknown Soldier	168
PEEBLES, C.	The Pegasus Launch Vehicle	89
PILCHER, C.B.	Science from a Lunar Base	309
RUSSELL, T.	The Balance Sheet of the Soviet Space Programme	273
SCHUILING, R.	STS-27 Mission Report	40
SCHUILING, R.	STS-30 Mission Report	260
SMITH, D.	Olympus - A Giant Amongst Satellites	386
SPROSTON, T.	A Visit to Space Camp	107
SUID, L.	Space Travel: Fiction and Reality	228
SVED, J.	Deciding to Colonise the Moon	237
VIS, B.	Payload Specialist Flight Hopes	134
WILKINS, D.E.B.	ESA's Ten-Year Success Story	17
WILKINS, D.E.B.	Olympus In Orbit	387
WINICK, L.	Post Office in Space	71
ZAITSEV, Y.	The Successes of Phobos-2	374

* * *

AUTHOR INDEX

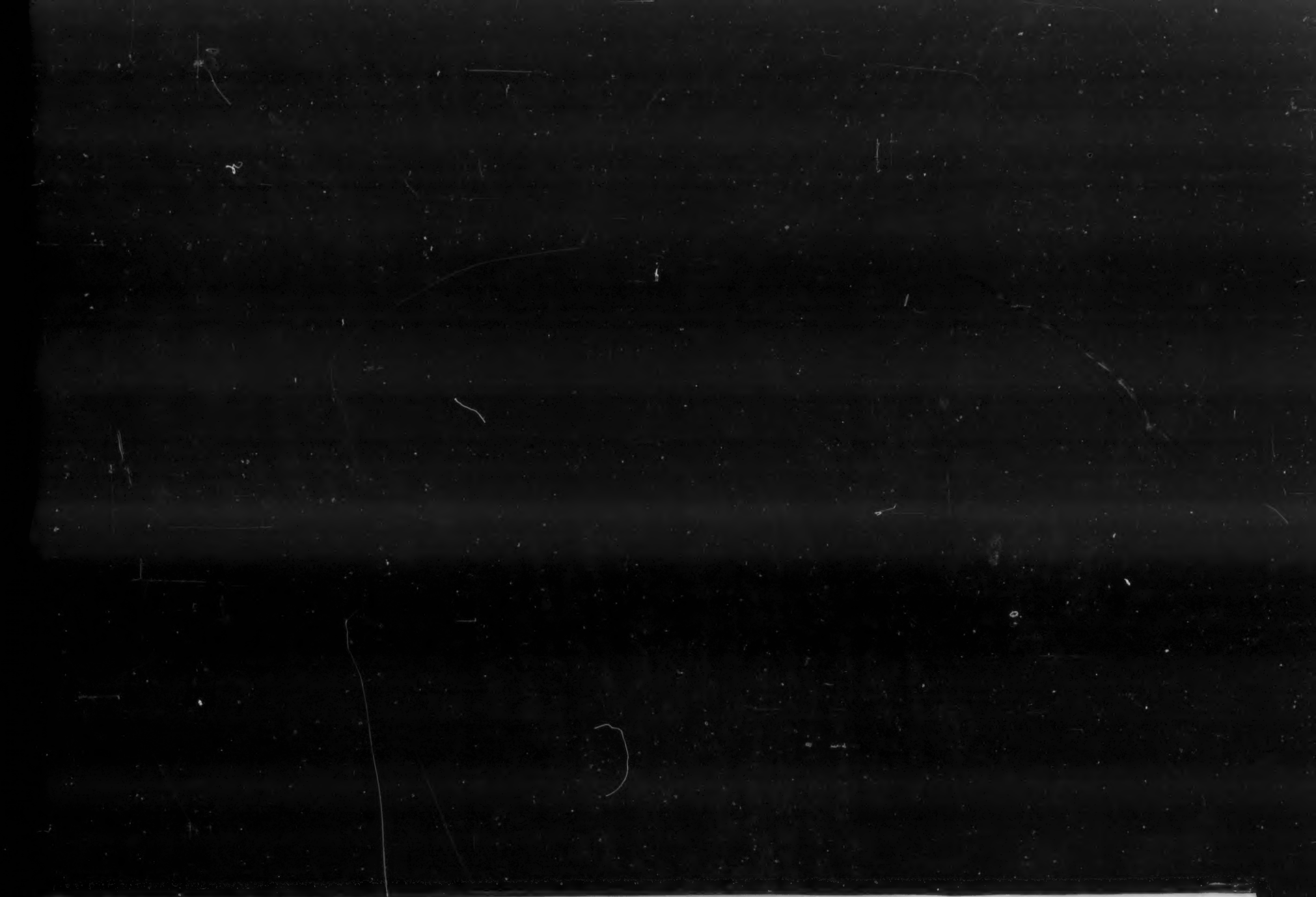
ARNOLD, H.J.P.	The Great Wall of China From Space	248
BEKEY, I	NASA's Plans for Manned Missions to the Moon and Mars	297
BOND, P.R.	The Soviet Snowstorm: Winged Wonder or White Elephant?	50
BURKE J.D.	Lunar Observatories	308
CASSUTT, M.	The Manned Space Flight Engineer Programme	26
CHAPPELL, J.	French Sign Photon Agreement	295
CHRISTY, R.D.	Satellite Digest	43,85,121,160,190
GIBSON, R.	A Way Forward for Britain?	177
GILES A.B. & HILL, K.M.	Optical Observations of Geostationary Spin Stabilised Satellites	310
HARRIS, L.	Into Space	215
HARVEY, B.	A New Eye on the Seas	62
HEMPSELL, C.M.	Space Industrialisation - A New Perspective	224
HEMPSELL, C.M.	Space Stations and Beyond	393
KIDGER, N.	Soviet Shuttle Mission Report	2
KIDGER, N.	Above the Planets	45,102,138,154
KIDGER, N.	Mir Mission Report	64,77,191, 402
KIDGER, N.	Mir Expansion Delayed	116
KIDGER, N.	The Soviets Return to Space	332
LONGDON, N.	On The Way To Horizon 2000	166
MacLENNAN, D.	Making Space News in New Zealand	143
McLAUGHLIN, W.I.	Space at JPL	12,93,124,156,202,282, 340, 407
MALINA, R.	Satellite Telescopes	143
MILLER, S. & LISMAN, S.	Rendezvous with Comet Kopff	195
MILLS, P.	Energia and Buran at Baikonur	380
PARKINSON, R.C.	Cities on the Moon - A Lost Vision?	220
PARKINSON, R.C.	My Career in Space	424
PATTIE, N.	Skynet 4 - The Unknown Soldier	168
PEEBLES, C.	The Pegasus Launch Vehicle	89
PILCHER, C.B.	Science from a Lunar Base	309
RUSSELL, T.	The Balance Sheet of the Soviet Space Programme	273
SCHUILING, R.	STS-27 Mission Report	40
SCHUILING, R.	STS-30 Mission Report	260
SMITH, D.	Olympus - A Giant Amongst Satellites	386
SPROSTON, T.	A Visit to Space Camp	107
SUID, L.	Space Travel: Fiction and Reality	228
SVED, J.	Deciding to Colonise the Moon	237
VIS, B.	Payload Specialist Flight Hopes	134
WILKINS, D.E.B.	ESA's Ten-Year Success Story	17
WILKINS, D.E.B.	Olympus In Orbit	387
WINICK, L.	Post Office in Space	71
ZAITSEV, Y.	The Successes of Phobos-2	374

* * *

SUBJECT INDEX

Above The Planet 45, 102, 139, 154
AMOS Satellite 176, 272
Amroc Launch Failure 366, 406
Antonov Transporter 267, 331
ARAMIS 23, 366
Ariane, EASAMS 254
  Record Order 110
  V27 98
  V28 98
  V32 386
  2, Final Launch 187
  4, First Launch 98, 161
  Fairings 366
  5, Contract 331
Arianespace Contract 184
Asteroid Len Carter 12
Asteroids Observed 227
Astra 1A 98
Astronauts, British 149, 257, 367
  European 254
  Jon McBride 211
  Karol Bobko 8
  Leave NASA 8, 187, 211
  Military 26
  New Applicants 365
  'Rick' Hauck 187
  S. David Griggs 277
  1990 Military Missions 218
Atlantis Orbiter 7, 40, 146
Atlas - Centaur 272, 366
Baikonur, Facilities 380
BIS, Apollo 11 Dinner 291, 319
  Report for 1988 313
  Visit to JPL 347
Brazil, Launch Dispute 187
Britain, Way Forward 165
BSB Satellite Launch 331
Buran 2
  At Paris Show 218, 265
  Checkout 380
  Cut-Away Drawing 117
  Manned Flight Puzzle 186
  Photograph 82
  Pilots 152
  Press Report 83
Cassini Mission 9, 43
Columbia, Engine Leak 218
  Flights Resume 293
  On Schedule 364
  STS-28 278
  STS-32 364, 396
  Tiles Missing 118
Columbus, Elements Renamed 293
  Sweden Joins 254
Comet Kopff 195
Communications Satellites, ESA 17
  Mobile 22
Correspondence 34, 56, 136, 151, 170, 208, 274, 354, 390, 412
Cosmonaut Delays 218
Cosmos Satellites, 2000 121
  2030 Destroyed 331
  2044 364
CRAF 195
Crews, STS-28 359
  STS-29 118, 177
  STS-30 147, 261
Delta II, NAVSTAR Launch 405
  Order 85
  SDI Payload 254
Delta III 272
Discovery, STS-29 172
ECS 17, 20, 22
Energia, Integration 380
  Third Launch 365
ERA Structure 78
ESA, Science 43
ESOC, Visit 15
  Experience 21
Eureca, Satellites 17
European Astronauts 254
  Space Operations Centre 15
  Space Station 293
EUVE Mission 143
Exos-D Satellite 119
Franco-Soviet Mission 8
Freedom Space Station, Budget Cuts 291, 399
  Cupola 149
  Docking Tests 7
  Japan Agreement 150
  Robotics Contract 188
  Scaled Down 366
  Soviet Launch Offer 267
  'Water Power' 189
Galileo 282
  At KSC 218
  At Venus 93
  Launched 407
  Mission 370
  Mission Preview 326
  Radiation Scare 292, 366
Geostationary Satellites, Optically Observed 310
German Space Operations Centre 95
Glasnos 38
GMS-4 Satellite 331
Great Wall of China 248
H-1, Launch Stopped 293
  Launched 331
Hermes, Critical Review 352
Hipparcus, Launched 293
  Orbit 329
  Begins Work 366
HISPASAT 293
Horizon 2000 43, 166
HOTOL 305
Hubble Telescope 149
  At KSC 406
  Launch Postponed 279
IAF, 39th Congress 11
Indian Launch Vehicle Status 272
Inmarsat-3, Bid 366
Insat-1D Accident 254, 331
Interstellar Flight 409
Interview, Romanenko 294
  Shatalov 112
Into Space 107, 143, 215, Facing 324
Io, Volcanoes 284
IRS 1-B Satellite 8
ISO Satellite 16
IUS 74
JCSAT-1 164
Juno Project, Candidates 334, 367, 402
  Experiments 335
  Search Underway 257
  Selection 303, 329
Kourou 164
Kvant, Cut-Away Drawing 117
LACE 254
LDEF 396
LifeSat 119
Long March Launch 272
Lunar, Colonies 220, 237
  Observatories 308
  Science 309
Magellan 146, 282
  Launch 184, 260
  Probe 9, 124
Manned Space Flight, Engineer Programme 26
Marecs 17, 20
Mars, Manned Mission 299
  MSRS Mission 129
Materials Processing 262
Meteosat Series 16
Mir, Advertisements 194
  Briton To Fly 149, 189
  Crew Return 332
  Cut-Away Drawing 116
  Expansion Delayed 116
  Mission Report 64, 77
  Module, Models 116
  New Module 363
  Photo From Soyuz 115
  Post Office 66, 71
  'Reequipment' Module 68
  Science Module 116
  Second Soviet/French Mission 66
  Soyuz TM-8 296
  Telescope Repair 64
  Unmanned 153, 191
Moon and Mars 291, 297, 399
MOP-1 161
NASA, Administrator 150, 255
  FY 1990 Budget 84
  Shuttle Chief 404
NASP, Funding Cut 167
  Scaled Down 255
Near-Infrared Mapping Spectrometer 94
Neptune, Approach 291
  Encounter Begins 202
  Fly-By 128, 340
  Great Dark Sport 345
  New Moons 292, 345
Norway in Space 426
Obituaries, Valentin Glushko 85
  Eugene Pepin 10
  Alan E. Slater 88
  William F. Temple 350
Oceanographic Satellite System 62
Offek-1 272
Okean Satellites 62
  Pictures Received 215
Olympus 1, At Kourou 189
  Launch 254
  Satellite 23, 366
  In Orbit 387
Orbital Operations 20
Orbiter Names 210
  Transporter 404
OTS 17, 22
Ozone 203
Parliamentary Space Committee 254
Pegasus, Booster 330
  Delay 293
  Launch Vehicle 89
  Marketing 254
  Set For Launch 269
Phobos 1 Loss 219
Phobos 2, Arrives At Mars 83
  Falls Silent 148
  First Pictures 119
  Mission Report 374
Plesetsk Visit 364
PRODAT 23
Progress Spacecraft, Cut-Away Drawing 117
  M 332
  New Development 266
  39, 40, 41 3
  41, Propellant Ran Out 219
Prospero Launch 34
Proton Rocket, To Earth 218
Retrievable Capsule 269
RME 254
Robotics Contract 188
ROSAT 95
Salyut, EVA 45, 102, 139, 154
  7, Photo 39
Satellite Digest 43, 85, 121, 160, 190, 368, 411
Satellite Reflectors Project 188
Satellite Tracking Facing 324
Scout Launch Vehicle 120

SETI 98
SHARE 74, 175
Shuttle, Booster Final Test 76
Computer 282
Earth Photography 213
ET Contract 331
ET's For Research 150
Fleet Status 118
Future 399
Landing Gear Tests 277
Launch Schedule 211, 279, 422
Military Use 26
New Booster 277
Payload Specialists 134
Z 301
Sideways-Looking Radar 63
Skylark Contract 189
Skynet-4 168
4B 98
SL-16 Details 218
Society News 10, 54, 86, 131, 179, 205, 243 285, 319, 348, 392, 423
Software 14
Soho/Cluster Mission 43
Solar Max 85, 364
Probe 156
Soviet-Austrian Mission 256
Soviet Space Plans 112
Soviet Space Programme 50
Soviet Shuttle, Mission Report 2
Philatelic Envelope 120
Programme 50
Tests 385
Soviets in Space 38, 45, 102, 139, 154
Soviet, Back-Up Crew 19
Biosat Mission 364
Budget 273
French Mission 77, 267
Logo 114
Lunar Programme 83, 293, 333
Mars Rover 375
MMU 38, 268
Photon Agreement 295
Scaled-Down Shuttle 331
Space Failures 182
Soyuz TM, Cut-Away Drawing 117
New Development 266
TM-5 79
TM-6 80
TM-7 8, 80, 194
TM-8 332
Space, At JPL 12, 93, 124, 156, 202, 282,
Camp 107
Debris 119, 149
Endurance Record 79
In New Zealand 143
Industrialisation 224
Infrastructure 55, 393
Radar Contract 187
Stamps 280
Travel 228
Space-lab Payload Specialists 120
Spaceplanes, Air Launch 331
Spot-4, Go-Ahead 366
Starfire 1 Launch 150
STS-26 Awareness Progam 143
STS-27, Launch Report 7
Mission Report 40
STS-28, Engine Fire 279
Launch 293
Mission 278, 358
Status Report 118
STS-29, Crewe 75, 118
Mission Report 172
Preview 74
SRB Stack 42
Status Report 118
STS-30 146, 184
Mission 280
Status Report 118
STS-32, Columbia on Schedule 364
STS-33, Postponed 211
Launched Scheduled 365
Update 405
STS-34 326
Mission Report 416
STS-46, BIS Member 366
TDRS-D 74, 175
Titan Probe Mission 9
Titan 2 404
Titan 4 Early Warning Launch 256
Titan 34D Launch 331
Triton 340, 408
UK, ESA Funding 43
Voskhod Missions 45
Voyager 2 340
At Neptune 128
Neptune Approach 282
Neptunian Moon 254

BOOK NOTICES INDEX

ARP, H. Quasars, Redshifts and Controversies 123
ARP, H .C. *et al* A Catalogue of Southern Peculiar Galaxies and Associations 100
ATLURI, S .N. & AMOS, A.K. Large Space Structuress: Dynamics & Control 100
ATREYA, S.K., *et al* Origin and Evolution of Planetary and Satellite Atmospheres 356
AUDOUZE, J & ISRAEL, G . The Cambridge Atlas of Astronomy 122
BAIRD, J. C. The Inner Limits of Outer Space 24
BERLIN, P. The Geostationary Applications Satellite 356
BINNEY, J. & TREMAINE, S. Galactic Dynamics 357
BRUCK, H.A. & BRUCK,M.T. The Peripatetic Astronomer: The Life of Charles Piazzi Smyth 356
BURBRIDGE, G. *et al* Annual Review of Astronomy and Astrophysics Vol. 26 122
CERUZZI, P.E. Beyond the Limits: Flight Enters the Computer Age 414
CLARK, P. The Soviet Manned Space Programme 52
COOK, A. The Motion of the Moon 101
CULP, R. D. & SHATTUCK, P. L. Guidance and Control 1988 122
DAVIES, J. K. Satellite Astronomy: The Principles and Practice of Astronomy from Space 122
EICHER, D. J. The Universe from Your Backyard 25
EL-GENK, M. S. & HOOVER, M .D. Space Nuclear Power Systems 1986 100
FABER, S. M. Nearly Normal Galaxies 24
FABIAN, A. C. Cooling Flows in Clusters and Galaxies 101
FABIAN, A. C. Origins 25
FORWARD, R.L. Mirror Matter: Pioneering Antimatter Physics 356
GEHRELS, T. On the Glassy Sea: An Astronomer's Journey 357
GRAHAM-SMITH, F. & LOVELL, B. Pathways to the Universe 247
GRINDLAY, J .E. & DAVIS, A.G. The Harlow-Shapley Symposium on Globular Cluster Systems in Galaxies 100
HARDING, R.M. Survival in Space 357
HARVEY, B. Race into Space: The Soviet Space Programme 52
HUMBLE, R .D. The Soviet Space Programme 53
HUNT, G. & MOORE, P. Atlas of Uranus 246
HURT III, H. For All Mankind 414
JONES, K. G. Webb Society Deep-Sky Observer's Handbook Vol.6 (Anonymous Galaxies) 53
JONES, K. G. Webb Society Deep-Sky Observer's Handbook Vol.7 (The Southern Sky) 53
KELLY, K. W. The Home Planet 25
KERROD, R. Apollo: The Greatest Adventure of All Times 414
KERROD, R. Illustrated History of Man In Space 415
KING-HELE, D. G. The R.A.E. Table of Earth Satellites 1957-1986 24
KOWAL, C.T. Asteroids: Their Nature and Utilization 247
LONG, K. The Moon Book 122
MARSHALL, L .A. The Supernova Story 25
MARX, G. Bioastronomy - The Next Steps 101
MASSON Astronomical Ephemerides: 1989 101
MOORE, P. The Planet, Neptune 246
MURRAY, B. Journey into Space 414
NEWTON, J. & TEECE, P. The Guide to Amateur Astronomy 123
PARKER, B. Creation: The Story of the Origin and Evolution of the Universe 24
PERGAMON JOURNALS New Opportunities for all People 24
PETERSON, R. B. The Wonderful Apparition: The Story of Halley's Comet 101
REINHARD, R. *et al* Exploration of Halley's Comet 25
RIDPATH, I. Star Tales 414
ROY, A .E. Orbital Motion 101
RYDER, G. & SHARPTON, V.L. Proceedings of the Nineteenth Lunar and Planetary Science Conference 415
SCHENKEL, P. ETI A Challenge for Space 122
SCHIRRA, W. M. Jnr. Schirra's Space 100
SCHROTER, E. H. The Role of the Fine-Scale Magnetic Fields on the Structure of the Solar Atmosphere 25
SEVIG PRESS 1989 European Space Directory 414
SOLDNER, J. K. *et al* Astrodynamics 1987 122
STRAUB D. Thermofluid-Dynamics of Optimised Rocket Propulsions 356
TASCIONE, T F Introduction to the Space Environment 100
TURNILL, R Janes' Spaceflight Directory 1988-89 24
TURNILL, R. Space Technology International 246
VAN DEN BERG, J.R .C. Guide to Manned Space Missions 53
WALLIS, B D & PROVIN, R.W. A Manual of Advanced Celestial Photography 122
WRAY, J.D. The Colour Atlas of Galaxies 356